INDIVIDUAL MEDICAL ORDERS
Type 1 Diabetes INJECTION

LEARNING CENTRE
Type 1 Diabetes Learning Centre

Australian Paediatric Society

Type 1 Diabetes in Schools
https://www.t1d.org.au

ISPAD
International Society for Pediatric and Adolescent Diabetes

ISPAD school e- learning professional development
www.ispad.org/news/news.asp?id=420540

This document, previously known as the **"Diabetes Management Plan"** outlines the consented medical management prescribed for this individual student with Type 1 Diabetes while under the care and supervision of school or pre-school personnel. These medical orders cannot be altered by a third party without parental consent.

STUDENT PHOTO

Name: _____ **Date of Birth:** ____ / ____ / ____

Parent 1/ Carer Name: _____

Parent 1/ Contact: _____

Parent 2/ Carer Name: _____

Parent 2/ Contact: _____

Diabetes Educator Name: _____

Diabetes Educator Contact: _____

Doctor Name: _____

Doctor Contact: _____

Insulin Injection Type: Pen/Syringe: _____

CGM Type/Model: _____

Emergency Response Plan outlines prescribed glucose target levels and urgent management of high and low glucose levels.

Health Support Plan developed between parent and school outlines how the school will execute these medical orders.

ON CAMPUS ESSENTIAL REQUIREMENTS

The T1D diabetes e-learning courses for school staff (www.t1d.org.au) are the required professional development for this student's individualised medical needs and must not be substituted by alternative learning courses.

LEVEL 1 AND LEVEL 2

- School personnel with a supervision responsibility for this student (class teacher/ homeroom teacher/special subject teachers/ relief teachers) are requested to complete level 1 and level 2 T1D e-learning courses. Blood glucose testing skills are necessary for school staff and this training (foundation and individualised) must also be completed.

LEVEL 3

- School personnel who are responsible for the execution of the complex care needs of this student whilst in the school's custody require the following skills and competencies as outlined in the adjacent table.

REQUIRED LEVEL 3 E-LEARNING MODULES

1. Drug administration foundations	YES / NO
2. Insulin injection - Syringe	YES / NO
3. Insulin injection - Pen	YES / NO
4. Insulin pump - Bolus	YES / NO
5. Insulin dose calculation foundations	YES / NO
6. Hybrid Closed Loop management	YES / NO
7. Glucagon injection	YES / NO
8. Ketone testing	YES / NO
9. Line change foundations	YES / NO
10. Mini dose glucagon	YES / NO

Parent _____ **Doctor** _____ **Date** ____ / ____ / ____

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DAILY REQUIREMENTS FOR SCHOOL / PRESCHOOL

Blood glucose (BG) check	Remind ☐	Observe ☐	Assist ☐	Perform ☐	No ☐
Insulin dose calculation	Remind ☐	Observe ☐	Assist ☐	Perform ☐	No ☐
Assistance with injection device	Remind ☐	Observe ☐	Assist ☐	Perform ☐	No ☐
Food Consumption	Remind ☐	Observe ☐	Assist ☐	Perform ☐	No ☐
Dose calculator		Observe ☐	Assist ☐	Perform ☐	No ☐

Note - Insulin MUST always be administered before the student commences eating

SELF MANAGEMENT SKILLS

- ☐ **Full Support:** All care performed by qualified/appropriately trained school staff
- ☐ **Supervision:** Assistance and supervision by qualified /appropriately trained staff
- ☐ **Self-care:** Student manages routine diabetes care requirements independently. Qualified/appropriately trained staff to provide support and supervision where required and as needed, in the event of becoming unwell.

The education provider's obligation to ensure the safety and wellbeing of the T1D student under their supervision is not diminished when the student may be capable of undertaking some routine diabetes care requirements. Qualified/ appropriately trained school staff must be available to support and/or perform the health services required for the student.

BLOOD / SENSOR GLUCOSE CHECKING TIMES

Student must wash and dry hands (sanitiser gel/hand rub cause errors and are NOT recommended).
CGM readings may be substituted for blood glucose readings unless low or not consistent with symptoms **YES/ NO**

	TIME	BLOOD (FINGER PRICK)	SENSOR (CGM/FLASH)
Low glucose (Hypo) suspected	Any Time	YES / NO	YES / NO
Exams	Prior/During Exam	YES / NO	YES / NO
Upon arrival to school		YES / NO	YES / NO
Pre-morning snack		YES / NO	YES / NO
Pre-morning recess		YES / NO	YES / NO
After morning recess		YES / NO	YES / NO
Pre-lunch		YES / NO	YES / NO
Pre-exercise / physical activity		YES / NO	YES / NO
After lunch recess		YES / NO	YES / NO
Pre-leaving school		YES / NO	YES / NO

Blood glucose levels vary with activity levels, stress, excitement, illness, menstruation, and food type/quantity.

LOW BLOOD GLUCOSE = LESS THAN _____MMOL/L

Symptoms and the prescribed treatment are outlined in the Emergency Response Plan.
Low glucose must be treated without delay with continuous responsible adult supervision during recovery.
Immediately notify parents for instruction if low glucose persists beyond 30 minutes despite treatment.

Low blood glucose ("Hypo") supplies are located:

In classroom under supervision: **YES / NO** With student: **YES / NO** Other _____

Please ensure low glucose kit is with the student when leaving school grounds on a school related activity.

Glucagon injection where prescribed is located (student locker is not recommended):

In classroom: **YES / NO** In "sick bay": **YES / NO** In Office: **YES / NO** Other _____

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HIGH BLOOD GLUCOSE = GREATER THAN 8.0 MMOL/L

The prescribed treatment is outlined in the Emergency Response Plan.

Administer insulin "correction bolus" if this student's blood/ sensor glucose is above ……..mmol/l UNLESS physical activity imminent or downward arrow on CGM where correction insulin will be administered when blood/sensor glucose is above ……..mmol/l **YES / NO**

Notify parents if the student is **unwell** with high blood glucose. **THIS MAY BE LIFE THREATENING.**

If in care of school for an extended time (e.g. overnight/ school camp) **blood ketones** must be tested if unwell. A level greater than 0.6mmol/l requires immediate medical management.

PHYSICAL ACTIVITY STRATEGY

Students with T1D should be encouraged and enabled to participate in physical activity with the appropriate adjustments for safety and optimal performance.

1. Insulin dose reduction before scheduled physical activity

Reduce insulin dose up to 2 hours before exercise **YES / NO**

This is achieved by reduced carbohydrate dosage by entering _____ g less for food entries up to 2 hours before exercise

2. Carbohydrate addition before and after exercise

Give _____ (without insulin) before exercise if Blood /Sensor Glucose is under 8 mmol/l or expected to be under 8 mmol/l within 15 minutes as indicated by downward trend arrow on CGM.

CONTINUOUS GLUCOSE MONITORS (CGM)

Continuous Glucose Monitoring (CGM) is now a very common and useful part of the student's routine diabetes management. The CGM may read continuously or intermittently depending on the technology in use. (Annexure 4)

The following devices are used as usual part of the medical treatment and must always be present with the student during school hours for medical purposes and communication to parents:

MOBILE PHONE: **YES / NO** SMART WATCH: **YES / N0** PUMP: **YES / N0** RECEIVER: **YES / NO**

If the student is wearing any type of CGM, refer to Annexure 4. Please discuss the CGM plan and interventions with parents.

Symptoms of low blood glucose should be treated regardless.

Sensor glucose (SG) devices have approximately a 5 to 15 minute lag time behind **blood glucose (BG) levels.**

Please use Trend Arrows on CGM (Annexure 4) to manage glucose levels YES / NO

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INJECTION TROUBLESHOOTING SKILLS

Parental guidance must be sought for syringes, pens and/or CGM relating to insulin delivery.

The parental assessment of their child's capabilities include that the student is:

- Able to put together syringe and needle or pen and needle **YES / NO**
- Able to draw up correct dose of insulin as calculated **YES / NO**
- Able to inject and depress plunger / button to deliver insulin **YES / NO**
- Able to self-administer insulin injection if required without supervision **YES / NO**
- Able to test ketones and interpret results **YES / NO**
- Action and interpret CGM Alerts **YES / NO**

COELIAC DISEASE

This student also has coeliac disease so must avoid gluten (wheat) **YES / NO**

RECORD KEEPING

All treatment / supervision of treatment undertaken must be recorded with the action taken, time and dose (where relevant) including (but not limited to):

- blood /sensor glucose results,
- insulin administration,
- incidence and treatment of low blood glucose ("hypos") or high glucose levels requiring correction.

Parents may request this information to be recorded in a Communication Book or other daily advice document (Annexure 4). These documents are medical records and remain the property of the parent.

WHY TARGET GLUCOSE IS IMPORTANT

High blood glucose levels should NOT be accepted as commonplace and MUST be acted upon. High blood glucose levels at school are unacceptable. High blood glucose levels can cause:

- ***brain injury***
- ***shortened life expectancy***
- ***significant impact upon mood, concentration, learning, memory and verbal comprehension.***
- ***markedly increased risk of long-term medical complications***

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COMMUNICATION

Caring for a student with T1D is best achieved through a cooperative, supportive and respectful relationship between the three key stakeholders – **parent** (and student when they are capable of greater independence in self-care), **school personnel and medical team.**

Parents are the final arbiters of whether their child can self-manage certain aspects of T1D, including glucose monitoring and self-administration of insulin. The medical team should guide and support parents to ensure the student is not subject to inappropriately unrealistic expectations.

An effective communication process between parent/student (when capable) and school personnel should be respectful, transparent and easily accessible.

ROLES AND RESPONSIBILITIES

Medical Staff/ Treating Medical Team

The student's treating doctor or nurse practitioner is responsible for prescribing medications. The medical team is responsible for outlining in detail the recommended medical requirements for that student. This cannot be delegated to a third party that is not authorized or not suitably qualified.

School personnel should consider the student's medical team as an accessible resource to contact with parental permission. A single member of the medical team should be identified as the source of contact for each student.

Parent/Legal Guardians

Parents are ultimately responsible for the medical decisions made on behalf of their child. Therefore, the parent's informed consent and decisions regarding the health and well-being of their child are paramount. It is imperative that parents remain engaged as part of the team even when the student with T1D reaches adolescence.

The school must contact the parent/legal guardian in first instance, however if the parent is uncontactable or in the event of an emergency, school staff are authorised to contact our child's treating medical team.

The contact person from the student's medical team is: _____ ***Ph:*** _____

PRIVACY

These Individualised Medical Orders contains private and confidential medical orders and individual health information. This information cannot be shared with any 3rd party without specific written parental/ legal guardian consent.

INFORMED CONSENT

The contents of these Individualised Medical Orders are my prescribed treatment and individualised medical orders

Signed (Doctor) Name _____ Date ___ / ____ /_____

I agree with prescribed treatment as outlined in these Individualised Medical Orders, Emergency Response Plan and associated Annexures. I understand that

- I am responsible for supply of all Type 1 Diabetes information and material, equipment, insulin, hypoglycaemia supplies and Glucagon Hypo kit.
- I understand it is my right and responsibility to notify the school of any changes to the prescribed treatment and medical needs of my child with Type 1 Diabetes.
- I understand that the education provider/ school/ pre-school is responsible for the fulfillment of this medical order in accordance with their legal and regulatory obligations.

This plan and associated documents cannot be altered or amended without consent.

Name: _____ *(parent / legal guardian)* Signature: _____

Date: _____ / _____ / _____

ANNEXURE 1

TERMINOLOGY

- **Pen** – a device that is used to deliver insulin. The Pen can deliver insulin in half units. A needle is attached to the end of the pen. The dose is calculated and dialled into the pen. The needle is then inserted under the skin and the button at the top of the pen is depressed, administering insulin to the child.
- **Syringe therapy** – in this circumstance the insulin dose is drawn up via a syringe then inserted under the skin.
- **Dose Calculator** – this may be a pre-programmed device (My Life, Freestyle Insulinix) or printed card (Ezy-Bicc) or phone app (My Life)
- **Ketones** – chemicals produced by fat breakdown when glucose becomes unavailable as a fuel for cells to burn for energy (e.g. failure of insulin delivery). Small amounts of ketones are not usually a concern however when present in large amounts can induce nausea and vomiting, potentially leading to serious problems.
- **Basal insulin** – background insulin that is delivered as a long acting insulin usually once or twice per day.
- **Bolus insulin** – insulin administered prior to food to match carbohydrate content of food.
- **Correction Bolus** – insulin administered to correct a high blood glucose.

VOMITING AND TYPE 1 DIABETES

Vomiting requires urgent assessment of blood glucose and blood ketones. It may indicate life-threatening "DKA". Never assume the cause of vomiting in a person with Type 1 Diabetes to be "gastro", food poisoning, migraine, excessive alcohol, until it is clear that insulin has been effectively administered. This will be evident if blood glucose is high and blood ketones are greater than 0.6mmol/l. Refer to **Emergency Response Plan**.

ISPAD RECOMMENDED LEVELS OF SCHOOL STAFF EDUCATION AND TRAINING

Level 1 - *All school personnel should be educated about basic medical understanding of T1D (including recognition and urgency of treatment for low blood glucose) and the effect of T1D on the student and the entire family including the social, economic and emotional impact of living with T1D.*

Level 2 - *Those school personnel most responsible for the day-to-day management of the child with T1D should be also trained for the individual student to*

1. *recognize low blood glucose symptoms and signs,*
2. *initiate treatment for high or low blood glucose levels and*
3. *know and understand when and whom to call for assistance, including emergency responders, parents and medical team.*

Level 3 -*Those school personnel with authorisation or seeking authorisation through training and informed parental consent to administer insulin require a higher level of training on:*

- *insulin administration, including dose calculation and adjustments*
- *the legal aspects of insulin administration insulin*
- *delivery devices including insulin pumps*
- *glucagon administration*

ANNEXURE 2

A PARENT GUIDE – INTERNATIONAL BEST PRACTICE TYPE 1 DIABETES CARE IN AUSTRALIAN SCHOOLS

A Parent Guide, based on International Society for Pediatric and Adolescent Diabetes (ISPAD) guidelines, has been produced and endorsed by the Australian Paediatric Society to assist parents understand how they may access best practice Type 1 Diabetes management for their child at school. The clinical guidance is based on ISPAD standards and is consistent with the ISPAD principles of international best practice clinical governance, advocacy, education and science. Available to download at **https://www.t1d.org.au/diabetes-at-school/a-parent-guide**

SCHOOL PERSONNEL TRAINING AGENDA

An agenda to assist school personnel training by the parent has been developed by the Australian Paediatric Society. This is a checklist to assist coverage of all important diabetes topics during individualised training.

Available to download at **https://www.t1d.org.au/images/docs/T1DLC_Training_Agenda.pdf**

GENERAL ISSUES WITH TYPE 1 DIABETES – ISPAD POSITION STATEMENT

ISPAD, the world authority on contemporary diabetes management, states: Schools are responsible for ensuring that their personnel are adequately educated about T1D and trained in the application of prescribed treatment for the individual student. The content of the training is the responsibility of the medical team and parent. Training should be executed by people with appropriate understanding of the student's individual needs and skill set.

School personnel must understand the emotional burden experienced by families when given a diagnosis of an incurable disease such as T1D that will relentlessly impact upon the student, siblings, family relationships and parental working lives.

A diagnosis of T1D may cause students to feel different from peers and put them at risk of being stigmatised, resulting in a higher risk of experiencing anxiety and depression. The traumatised family may feel helpless and disempowered and yet have an obligation to advocate for their child.

Each family will have access to different resources, coping skills and economic circumstances. School personnel will have varying interest and levels of expertise. Hence care of the student must be individualized.

Schools should not expect that young people with diabetes will "learn responsibility" for self-managing T1D by leaving them unsupported during school hours. Nor will the duration the student has lived with T1D determine their ability to be self-sufficient. Young students may be capable but should not be solely responsible for their management at school. (ISPAD PS 6.9)

Young children are not capable of managing diabetes care. They **require extra support at school** and all very young children need full support to ensure safe and legal insulin delivery and other diabetes care. The child with diabetes may be encouraged to be involved in care and perform some tasks by themselves under supervision. The student may be capable but should not be responsible for Type 1 management during school hours as the effects of low or high blood glucose may seriously impair judgement.

There is no consensus as to what age the student may be expected to have responsibility for self-care during the school day. In most cases the child is mature enough by 12 years but a neurocognitive dysfunction, learning disability or psychosocial vulnerability can cause prolonged need for support. The parent is the best and most appropriate person to judge this in conjunction with the child's medical team and should document the amount of assistance and supervision required in the child's individual Diabetes Management Plan.

There is increasing recognition that adolescents are generally not capable of total diabetes care until they leave school and their forebrain fully develops. Adolescents have other interests, do not want to be different from their peers and having a condition such as diabetes may carry a stigma, so diabetes management is often not a high priority. Diabetes teams aim to encourage children with Type 1 to enjoy active "normal" lives not inhibited by Type 1. Discrimination, exclusion, inappropriate comments, and lack of facilitation of Type 1 requirements during school time for many children can destroy such ethos.

ANNEXURE 3
DIABETES SUPPLIES

ALWAYS HAVE AVAILABLE UPDATED SUPPLIES AT SCHOOL:

- Blood Glucose meter, test strips, finger lancet device
- Blood ketone strips and ketone tester (Optimum Exceed or Optimum Neo)
- Glucagon
- Spare rapid insulin and spare long-acting insulin
- Syringes / Pens
- Hypo food - fast acting carbohydrate (eg juice, glucose tablets) AND sustaining carbohydrate food
- Team contact details

ADDITIONAL REQUIREMENTS FOR SCHOOL CAMP

- Spare CGM sensor and inserter
- Spare rapid acting insulin (in-date)
- Charge cables or batteries where required
- Clearly written and consented communication strategy

IT IS THE RESPONSIBILITY OF

- the parent to supply these items.
- the school to notify the parent if supplies are low

ANNEXURE 4

CONTINUOUS GLUCOSE MONITOR (CGM)

There are two main systems of CGM in Australia:

1. **Real-time CGM** (rtCGM) utilize real-time alarms for thresholds and predictions of hypo- and hyperglycaemia, as well as rate of change alarms for rapid glycaemic excursion. Some CGM sensors transmit signals to the "cloud," and allow for digital remote monitoring, through which caregivers are able to view a patient's CGM tracing and receive alerts on their own devices, including smartphones, tablets, and smart watches.

2. **Intermittently scanned" CGM** (isCGM) systems, also known as flash glucose monitoring (FreeStyle Libre), do not automatically display glucose readings at regular intervals, but report glucose levels only when the user scans the sensor by holding a reader, or a mobile phone, close to the sensor. (5)

Each CGM available has different options and platforms to access and receive the sensor glucose data, notifications, alerts and alarms from the CGM transmitter via Bluetooth. These include, a specific data receiver, an application on a mobile (smart) phone, smart watches, web pages and direct to the insulin pump screen.

Some CGM technologies allow the data to be accessed from multiple platforms while others have a single specific platform to receive and access data. When the student's CGM data is "shared" it is done by an application using a wireless network or cellular data. Hence some CGM technologies enable the student to share the real time glucose monitoring data with others, who might include the school nurse, authorised school personnel and the parent. The ability for others to view the glucose data and receive the notifications, alerts and alarms from the individual with T1D is referred to as "remote monitoring".

CGM provides valuable information about glucose levels for the student, caregivers, school nurse, and diabetes care team. CGM update glucose data every 5 minutes, providing 288 readings per day. In addition, CGM have trend arrows, that in combination with the current glucose level, allow the student, and the school personnel responsible for the student's complex medical care, to know what the current glucose level is, where it is going, and how fast it is changing.

DEXOM CGM	LIBRE	MEDTRONIC CGM	SIGNIFICANCE	PREVENT LOW BY (CONSIDER THE EFFECT OF THE EXERCISE)
⇓⇓		⇓⇓⇓	BG will fall > 2.5mmol/l in 15 mins	If BG 6.5mmol/l or lower - treat as per **Concise Action Plan**
↓	↓	⇓⇓	BG will fall > 1.7mmol/l in 15 mins	If BG 5.7mmol/l or lower - treat as per **Concise Action Plan**
↘	↘	↓	BG will fall > 0.8mmol/l in 15 mins	If BG 4.8mmol/l or lower - treat as per **Concise Action Plan**
→	→	→	BG will fall > 2.5mmol/l in 15 mins	Observe

ANNEXURE 5

OFF CAMPUS ESSENTIAL REQUIREMENTS

The medical management at school camp and other off-campus activities is no different to management on the school campus with the same responsibilities, Emergency Response Plan and target glucose levels.

Parents must be fully briefed on all off-campus activities, with the school providing the appropriate information for excursions, camps and any other off campus activity. Special preparation, including upskilling, risk assessment and communication strategies may be required to account for remoteness, activity, supplies and self-management skills. TheT1D School Camp Checklist to be completed by the school and parent is available at:

https://www.t1d.org.au/resources/school-camp-checklist-type-1-diabetes

The following skills and competencies are required for school staff to execute the complex care needs for this student whilst in the school's custody during the specific off-campus activities outlined below. A review of requirements is needed for each new/changed activity.

REQUIRED LEVEL 3 E-LEARNING MODULES

1. Drug administration foundations	YES / NO
2. Insulin injection - Syringe	YES / NO
3. Insulin injection - Pen	YES / NO
4. Insulin pump - Bolus	YES / NO
5. Insulin dose calculation foundations	YES / NO
6. Hybrid Closed Loop management	YES / NO
7. Glucagon injection	YES / NO
8. Ketone testing	YES / NO
9. Line change foundations	YES / NO
10. Mini dose glucagon	YES / NO

Blood glucose testing skills are necessary for school staff. Both foundation and individualised training must also be completed.

The competencies /skills required to support this student off-campus will be defined by a specific Health Support Plan for this off campus activity developed by the school and parent and can be assisted by successful completion of the T1D Level 3 modules (www.t1d.org.au). Practical skills can be augmented by the parent or medical team where available. (The obligatory requirement for accredited training for non-medical staff providing complex T1d care has not yet been provided in Australia).

Commencement date of activity _____ / _____ / _____ **Location** _____

Parent _____ **Date** _____ / _____ / _____

Doctor _____ **Date** _____ / _____ / _____

ANNEXURE 6

OTHER INDIVIDUAL REQUIREMENTS

The following are also required for the complex care of my child with Type 1 Diabetes to maintain blood glucose levels as much as possible in the normal range whilst under the care of school:

Name: _____ *(parent / legal guardian)* Signature: _____

Date: _____ / _____ / _____